

# Water Resource Management

*“Water is one of the world’s most precious natural resources. Proper management of it allows us to live with it, not against it.”*

## SERVICES:

### • Hydrologic/Hydrogeologic Engineering

- Regional Flow Analyses
- Water Supply Source Analyses
- Aquifer Response /Pump Testing
- Well Siting and Design
- Wellhead Protection Analyses
- Water Quality Analyses
- Permitting Application and Support (Industrial Discharge Permitting, Construction and Industrial Stormwater Permitting, State Waterbody and Wetland Permitting, Water Appropriations Permitting)

### • Dredging

- Wetlands Evaluation
- Wetlands Delineation/Mitigation
- Permitting (DNR, Army Corp of Engineers, and MPCA documentation)
- Sediment Surveys
- Environmental Assessments
- Engineering Design
- Dredge Spoils Disposal/Reuse

### • Storm/Surface Water Management

- Flood and Erosion Control
- Water Modeling
- Storm Water Runoff Analyses/Planning
- Storm Water Pollution Prevention Plans
- Wetland/Ecological Services

### • Water Quality Management and Enhancement

### • Funding and Grant Programs

## OUR APPROACH:

Pinnacle works with city, county, and water management organizations, assisting with a variety of water resource management issues. With experts in the fields of ecology, geology, conservation, and engineering, we prepare water management plans, and assist our clients with implementing the improvements and enhancements identified in these plans.

## BENEFITS TO YOU:

- Partnering with Pinnacle ensures the expertise and assistance needed to remain a front-runner with your technical and environmental needs.
- Costs are kept within budgets and issues are resolved in a timely manner as plans are implemented.



## PINNACLE SOLUTIONS:

- Pinnacle integrated a 900-acre development’s water management system into a regional water quality plan that included sensitive receptors, two trout streams, and Lake Pepin.
- Wetland construction design parameters were determined by our engineers to minimize the impact of storm water discharge to a trout stream near Duluth, MN.
- Pinnacle coordinated site remediation through the MPCA VIC program and prepared a Response Action Plan that involved the use of dredge sand from Lake Winona as additional fill for a building development site. Pinnacle obtained a dredge permit for the City to remove dredge sand from Lake Winona for use on the development property. An estimated 400,000 cubic yards of dredge sand was utilized to bring the site up to grade to match the surrounding developed properties.

